

Introduction

CSE 216: Database Sessional

Adapted from

Md. Tareq Mahmood

Data

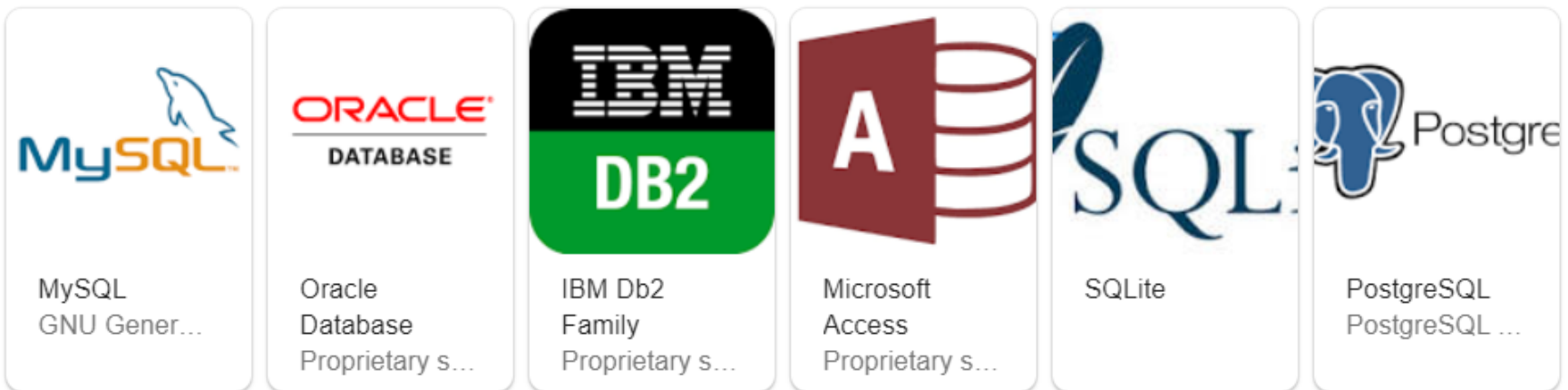
Data are individual units of information

Database

- *A large, integrated, systematic collection of data*
- *For example:*
 - *BIIS Database*
 - *Goodreads Database*
 - *Rokomari Database*
 - *Etc.*

DBMS

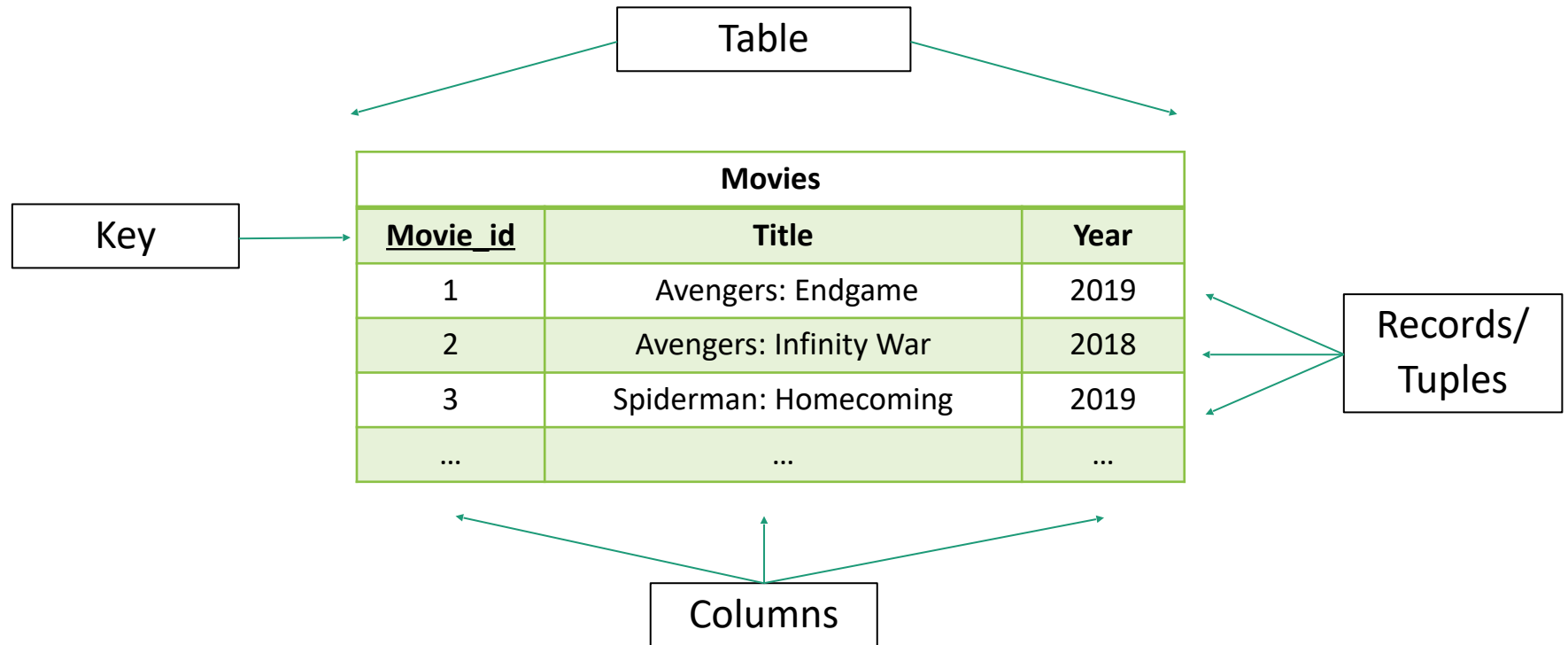
- *DataBase Management System*
- *A piece of software designed to store and manage databases*
- *Examples:*



Database Terms

In a broad sense

Example Database: IMDB



Example Database: IMDB

- Relationship

Actors		
<u>Actor_id</u>	<u>First_name</u>	<u>Last_name</u>
1	Robert	Downey Jr.
2	Chris	Evans
3	Mark	Ruffalo
...		...

Movies		
<u>Movie_id</u>	<u>Title</u>	<u>Year</u>
1	Avengers: Endgame	2019
2	Avengers: Infinity War	2018
3	Spiderman: Homecoming	2019
...

Appearances		
<u>Actor_id</u>	<u>Movie_id</u>	<u>Role</u>
1	1	Ironman
2	1	Captain America
3	1	Hulk
...

Relationship Types

- *One-to-one*
- *One-to-many*
- *Many-to-many*

Can you come up with some examples of tables and relationships in BIDS setting?

Schema

- *Blueprint of a database*
 - *Design of tables*
 - *How tables are related*
-
- *Oracle has a built-in database schema*

Oracle SQL

SQL – Structured Query Language

- Querying data
- Inserting, updating, and deleting rows in a table
- Creating, replacing, altering, and dropping objects
- Controlling access to the database, and its objects
- Guaranteeing database consistency and integrity

Statements

SQL statement	Function of the statement
SELECT	Retrieves data from database
INSERT UPDATE DELETE	Inserts data, updates data, and deletes data in database
CREATE ALTER DROP	Creates new tables in database, alters existing tables, deletes tables from database
COMMIT ROLLBACK	Saves data permanently in database, erases changes done form database

SQL Working Tools

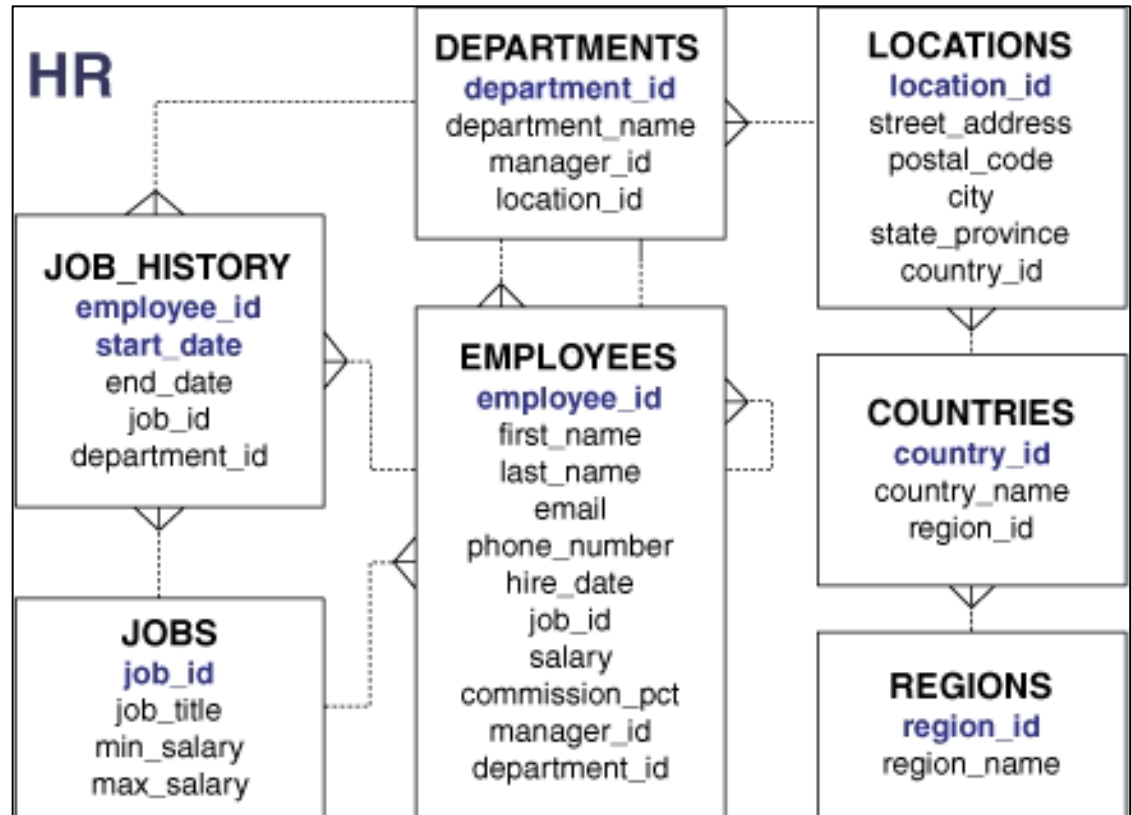
There are **many** tools that can be used for SQL. They are:

- SQL * PLUS – This is a command line tool and is the most popular tool
- SQL Developer – This is a graphical tool used by Oracle users to interact with Oracle database.
- Navicat – This is a third party tool that is used to connect to several databases such as Oracle, MySQL, etc. This is one of the most popular GUI tools to interact with database.

You might try out [Datagrip by Jetbrains](#)

HR Schema

- *Builtin database schema for learning*
- *Description in text book*



SQL Live

<https://livesql.oracle.com/apex/f?p=590:1000>

<https://www.youtube.com/watch?v=4oxsxJQQC-s>